

Method for Monitoring the Functions and Increasing the Operational Reliability of a Safety-relevant Control System

Abstract:

A method for monitoring the functions and increasing the operational reliability of a complex safety-relevant control system, e.g. a motor vehicle control system, such as a brake system (ABS, TCS, ESP, EHB, EMB), a steering aid ('steering-by-wire'), etc., and for detecting and evaluating system errors comprises the steps of:

- detecting a system error and evaluation as a group error,
- bringing about a complete system degradation or a partial system degradation corresponding to the group error, e.g. limitation of the system functions and the system availability,
- localizing the system error and the error source by tests, logical combining of the test results, plausibility considerations, etc. and
- gradually canceling the restrictions of the system functions and enhancing the system availability in dependence on the result of the individual steps for bounding or localizing the system error and the error source.

(Figure 1)